AMENDMENTS TO THE CLAIMS

Please cancel claims 18, 22, and 23 without prejudice or disclaimer of the subject matter recited therein.

Please amend the claims as indicated below.

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of the Claims

Claims 1 - 16 (cancelled)

Claim 17 (currently amended) A device for contactless electrical power transmission in a rotary-wing aircraft system including a stationary portion of a rotor shaft bearing of a rotary-wing aircraft and a rotor shaft of the rotary-wing aircraft, power being transmitted between the stationary portion of the rotor shaft bearing of the rotary-wing aircraft and the rotor shaft of the rotary-wing aircraft, the device comprising:

an inductive transformer including a primary winding disposed on the stationary portion of the rotor shaft bearing of the rotary-wing aircraft and a secondary winding disposed on the rotor shaft of the rotary-wing aircraft, the inductive transformer bridging an isolating point between the stationary portion of the rotor shaft bearing of the rotary-wing aircraft and the rotor shaft of the rotary-wing aircraft;

a frequency generator having a series-resonant circuit capacitor connected to the primary winding; and

<u>at least one capacitive actuator disposed in operative connection with at least one actuator control element,</u>

<u>the</u> at least one actuator control element <u>being</u> connected to the secondary winding and including a matrix arrangement of a plurality of switchable power semiconductors, wherein at least portions of the inductive transformer, frequency generator and at least one actuator control element are disposed in an area of the rotor shaft and a rotor head of the rotary-wing aircraft,

the at least one actuator control element including a plurality of generating devices, a regulator, and a controller,

the controller being configured to impress positive and negative half-waves or half-wave segments of a high-frequency alternating current into the actuator,

the regulator being connected to the controller so as to form difference sized half-wave segments of a current using a magnitude signal as a function of a magnitude of a difference between a setpoint actuator voltage and an actual actuator voltage, and so as to control the power semiconductors using a polarity signal as a function of a polarity sign of the difference between the setpoint actuator voltage and the actual actuator voltage, in such a way that, when the polarity sign of the difference is negative, a successive charge or power is withdrawn from the actuator from one half-wave to the next and, when the polarity sign of the difference is positive, a successive charge or power is supplied to the actuator from one half-wave to a next half-wave,

the controller being connected to the generating devices so as to generate switching grid signals of a switching grid synchronized with the alternating current, and the controller being connected to the regulator so as to supply the polarity signal so as to set a direction of the shift and a magnitude signal so as to set a magnitude of the shift, the controller including:

a logic device configured to form switching signals of an initial position of pairs of the switchable semiconductors connected in series using the switching grid signals, and

a shift advance device configured to advance switching of a switch pair by a shift relative to the initial position during a rectifier operation and the controller includes a shift lag device configured to subtract switching-of the switch pair by the shift relative to the initial position during an inverter operation.

Claim 18 (cancelled)

Claim 19 (currently amended) The device as recited in claim 17[[18]], wherein the at least one capacitive actuator is disposed in at least one rotor blade of the rotary-wing aircraft.

Claim 20 (previously presented) The device as recited in claim 17, wherein:

a) the plurality of switchable power semiconductors include unipolar switchable power semiconductors configured to form an output voltage of the actuator control element with only one polarity of at least one output conductor; and

b) the unipolar switchable power semiconductors are disposed in direction relative to the only one polarity of the output voltage and are configured to take up the output voltage as blockage voltage and to switch the current from a positive one of at least one output conductor to an alternating current input.

Claim 21 (previously presented) The device as recited in claim 17, wherein the plurality of switchable power semiconductors include bipolar switchable power semiconductors configured to form an output voltage of the actuator control element with alternating polarity of output conductors, the bipolar semiconductors selectively blocking positive or negative voltages and switching currents in both conduction directions.

Claim 22 (cancelled)

Claim 23 (cancelled)

Claim 24 (cancelled)

Claim 25 (previously presented) The device as recited in claim 17, further comprising an azimuth sensor disposed on the rotor shaft and having an output connected to the actuator control element.

Claim 26 (previously presented) The device as recited in claim 17, further comprising:

an aerodynamically active-device actuated by a capacitive actuator and having an output connected to the capacitive actuator; and

at least one sensor disposed in an area of a rotor blade and configured to detect a position of the aerodynamically effective device.

Claim 27 (previously presented) The device as recited in claim 17, further comprising electrical controls and wherein the actuator control element and the electrical controls are disposed in the rotor head and are connected to the inductive transformer via lines disposed in the rotor shaft.

Claim 28 (currently amended) A method to provide power of at least one capacitive actuator wherein the at least one actuator is arranged on a moving part system that is separated from a stationary system by an isolating point, the method comprising:

generating a high-frequency alternating current from a direct voltage using a frequency generator disposed in the stationary system, the high-frequency alternating current having an amplitude independent of a phase angle and of an amplitude of a reverse voltage;

transmitting the alternating current from a primary winding of an inductive transformer that bridges the isolating point; and

separating the alternating current coming from a secondary winding of the inductive transformer in the moving part system into positive and negative half-waves or segments of these half-waves and always impressing the alternating current into the at least one actuator using an electronic control element in a direction such that a length change of the actuator occurs in a desired direction in each half-wave,

the electronic control element including a plurality of switchable power semiconductors, a plurality of generating devices, a regulator, and a controller,

the controller being configured to impress positive and negative half-waves or half-wave segments of a high-frequency alternating current into the actuator,

the regulator being connected to the controller so as to form difference sized half-wave segments of a current using a magnitude signal as a function of a magnitude of a difference between a setpoint actuator voltage and an actual actuator voltage, and so as to control the power semiconductors using a polarity signal as a function of a polarity sign of the difference between the

setpoint actuator voltage and the actual actuator voltage, in such a way that, when the polarity sign of the difference is negative, a successive charge or power is withdrawn from the actuator from one half-wave to the next and, when the polarity sign of the difference is positive, a successive charge or power is supplied to the actuator from one half-wave to a next half-wave,

the controller being connected to the generating devices so as to generate switching grid signals of a switching grid synchronized with the alternating current, and the controller being connected to the regulator so as to supply the polarity signal so as to set a direction of the shift and a magnitude signal so as to set a magnitude of the shift, the controller including:

a logic device configured to form switching signals of an initial position of pairs of the switchable semiconductors connected in series using the switching grid signals, and

a shift advance device configured to advance switching of a switch pair by a shift relative to the initial position during a rectifier operation and the controller includes a shift lag device configured to subtract switching of the switch pair by the shift relative to the initial position during an inverter operation.

Claim 29 (currently amended) A method to provide power of at least one capacitive actuator, the method comprising:

generating a high-frequency alternating current from a direct voltage using a frequency generator, the high-frequency alternating current having an amplitude independent of a phase angle and of an amplitude of a reverse voltage;

separating the high-frequency alternating current into positive and negative half-waves or segments of these half-waves; and

always impressing the high-frequency alternating current into the actuator using an electronic control element in such a direction that a length change of the actuator occurs in a desired direction in each half-wave,

the electronic control element including a plurality of switchable power semiconductors, a plurality of generating devices, a regulator, and a controller,

the controller being configured to impress positive and negative half-waves or half-wave segments of a high-frequency alternating current into the actuator,

the regulator being connected to the controller so as to form difference sized half-wave segments of a current using a magnitude signal as a function of a magnitude of a difference between a setpoint actuator voltage and an actual actuator voltage, and so as to control the power semiconductors using a polarity signal as a function of a polarity sign of the difference between the setpoint actuator voltage and the actual actuator voltage, in such a way that, when the polarity sign of the difference is negative, a successive charge or power is withdrawn from the actuator from one half-wave to the next and, when the polarity sign of the difference is positive, a successive charge or power is supplied to the actuator from one half-wave to a next half-wave,

the controller being connected to the generating devices so as to generate switching grid signals of a switching grid synchronized with the alternating current, and the controller being connected to the regulator so as to supply the polarity signal so as to set a direction of the shift and a magnitude signal so as to set a magnitude of the shift, the controller including:

a logic device configured to form switching signals of an initial position of pairs of the switchable semiconductors connected in series using the switching grid signals, and

a shift advance device configured to advance switching of a switch pair by a shift relative to the initial position during a rectifier operation and the controller includes a shift lag device configured to subtract switching-of the switch pair by the shift relative to the initial position during an inverter operation.